

Sutter County Groundwater Management Plan

1. Project Description

<i>Project Type:</i>	Groundwater/surface water planning
<i>Location:</i>	Sutter County
<i>Proponent(s):</i>	Sutter County, Department of Public Works
<i>Project Beneficiaries:</i>	Groundwater users in Sutter County
<u>Total Project Components:</u>	Short-term components, develop a groundwater management plan and groundwater monitoring protocols, perform initial groundwater quality sampling, establish groundwater database, identify point and non-point sources of contaminants, identify and/or establish groundwater recharge opportunities, establish new monitoring sites, implement monitoring program, implement groundwater management plan
<i>Potential Supply:</i>	None
<i>Cost:</i>	\$360,000 (plus long-term monitoring costs to be determined in short-term component)
<i>Current Funding:</i>	None
<u>Short-term Components:</u>	Establishing the groundwater plan and all tasks necessary before implementing the plan and monitoring program
<i>Potential Supply (by 2003):</i>	None
<i>Cost:</i>	\$360,000
<i>Current Funding:</i>	None
<i>Implementation Challenges:</i>	Public perception, coordination among public and private entities, coordination with existing groundwater management plans
<i>Key Agencies:</i>	Sutter County; water districts, reclamation districts, and water companies within the County; private well owners; neighboring counties—Yuba, Butte, Placer, Sacramento, Colusa, Yolo

Summary

Sutter County encompasses approximately 607 square miles and is transected by the Sacramento River, the Feather River, and the Sutter Bypass. Water use is primarily for agricultural purposes with 40 percent of the supply consisting of groundwater. Sutter County lies in the Chico and Sacramento groundwater basins. A map of Sutter County with major hydrologic features and various district areas is shown on Figure 20A-1.

Currently, Sutter County does not have a groundwater management plan. The proposed project is to prepare the plan as a first step in promoting countywide coordination of groundwater use and protection. The management plan would address water quality, water levels, aquifer characteristics, groundwater origins, surface water-groundwater interaction, historical pumping, and the potential for land subsidence induced by pumping. A baseline database including Geographic Information System (GIS) mapping data would be established. A monitoring program for new monitoring wells, existing agricultural wells, domestic wells, and state wells would be planned in this project and implemented in future phases.

A public outreach portion of the project would allow the county to evaluate potential conjunctive use operations and third-party impacts associated with groundwater management. As part of the plan, various basinwide groundwater management scenarios would be developed. The proposed plan would allow Sutter County to be more active in countywide approaches to groundwater management.

Short-term Component

Sutter County is proposing to develop a groundwater management plan to help promote sustainable, high-quality groundwater use in the county and to develop countywide approaches to groundwater planning. The proposed project would consist of several tasks to be completed by December 2003. The proposed plan is not anticipated to produce water, but would support groundwater use now and in the future.

Task 1: Develop Groundwater Management Plan

The initial task required for developing the plan would be the formation of a work group that would develop the groundwater plan objectives during the planning process. Existing studies and groundwater data would be examined to assist with the development of the plan's objectives. The plan would address water levels, water quality, aquifer characteristics, surface water/groundwater interaction, historical and induced land subsidence due to pumping. The plan would also address groundwater yield and the protection of natural recharge as well as opportunities for artificial recharge. The development process would include coordination with the numerous groundwater management plans already implemented by several water districts or companies within Sutter County.

Overall, the plan would provide the basis for establishing countywide groundwater ordinances. Sutter County proposes that implementation of the groundwater plan will achieve a more coordinated approach to future groundwater use and protection throughout the county.

Task 2: Develop Groundwater Monitoring Program

A critical part of the proposed groundwater management plan would be to establish a groundwater monitoring program. Protocols for water quality sampling and level measurement would be established, and all field data needs would be identified. The monitoring program would be essential to determine the effects of current and future groundwater pumping on the aquifer. The monitoring program would require cooperation from well owners for periodic monitoring and water sampling.

The program would also identify areas requiring new monitoring wells for complete countywide monitoring coverage. Construction for the new monitoring wells would occur after completion of this proposed project.

Task 3: Develop Groundwater Monitoring Database

To determine baseline conditions in the county, water quality sampling and water level measurements would be taken. The baseline conditions would be incorporated into the groundwater management plan. The initial database development would assist in defining performance measures for the county's groundwater resources.

Historical data would be obtained from the Department of Water Resources (DWR) Division of Planning and Local Assistance. The historical data and baseline data would be combined in a single GIS database.

Task 4: Public Outreach and Coordination

The public outreach portion of the proposed project will be critical if successful implementation is to follow plan development. The groundwater management plan and the groundwater ordinances that may follow will affect all groundwater users. Interested stakeholders would provide input to the objectives of the groundwater management plan and would be involved in every step of the process. The county envisions public meetings, presentations, news releases, newsletters, and a web site to achieve this goal. All interested parties would have the opportunity to review drafts of the plan.

Another objective of the public outreach task would be to coordinate with all water agencies and companies in Sutter County to prevent duplication of groundwater planning or monitoring efforts.

Long-term Component

The primary purpose of this evaluation is to evaluate the potential for this project to provide water supply benefits in the short-term (by end of 2003). As part of this initial evaluation, potential long-term components of the proposed project (defined as any part of the project proceeding past or initiated after December 2003) have been considered on a conceptual level. Further consideration and technical evaluation of long-term component feasibility and cost will occur as the next level of review under the Sacramento Valley Water Management Agreement. Long-term-component project descriptions are included in these short-term project evaluations only as a guide to the reader to convey overall project intent.

Sutter County intends to use the groundwater management plan developed in the short-term component to assist in coordinating all groundwater activity in the county and implement the recommended groundwater monitoring program for groundwater levels and

quality. The groundwater management plan would support any future proposed groundwater development projects including the conjunctive management of surface- and groundwater supplies. The groundwater plan would also lead to the development of groundwater ordinances similar to those in other Sacramento Basin counties. The plan would provide the basis for ordinances that intend to protect the groundwater supply for all Sutter County users.

2. Potential Project Benefits/Beneficiaries

Water Supply/Management Benefits

Protection of the resource in terms of quality and sustainable aquifer storage is the main benefit of the proposed groundwater management plan. The plan itself would not produce water, but would guide future groundwater development in a coordinated countywide manner. The planned and coordinated approach to groundwater resource management would benefit all water users in Sutter County.

Environmental Benefits

Groundwater-quality monitoring could potentially reduce the amount of contaminated groundwater applied to agricultural land, thereby decreasing contaminants that may flow into the natural water courses. Any reduction in contaminants from agricultural drainage is a benefit to the environment of rivers and the Delta.

Water Quality Benefits

This groundwater project includes water quality objectives. Sutter County has been long aware of groundwater contaminants, including arsenic and nitrates and high salinity levels. An intended outcome of implementing a groundwater management plan and a well-planned monitoring program is determining the extent of contamination and potential sources.

3. Project Costs

The cost opinions shown, and any resulting conclusions on project financial or economic feasibility or funding requirements, have been prepared for guidance in project evaluation from the information available at the time of the estimate. It is normally expected that cost opinions of this type, an order-of-magnitude cost opinion, would be accurate within +50 to -30 percent. Project costs were developed at a conceptual level only, using data such as cost curves and comparisons with bid tabs and vendor quotes for similar projects. The costs were not based on detailed engineering design, site investigations, and other supporting information that would be required during subsequent evaluation efforts.

The final costs of the project and resulting feasibility will depend on actual labor and material costs, competitive market conditions, actual site conditions, final project scope, implementation schedule, continuity of personnel and engineering, and other variable factors. As a result, the final project costs will vary from the opinions presented here. Because of these factors, project feasibility, benefit/cost ratios, risks, and funding needs

must be carefully reviewed prior to making specific financial decisions or establishing project budgets to help ensure proper project evaluation and adequate funding.

Table 20A-1 presents a project cost estimate for the short-term project component.

TABLE 20A-1
Estimated Project Costs
Sutter County Groundwater Management Plan

Item	Quantity	Units	Unit Price (\$)	Total Cost (\$)	Assumptions
Groundwater Management Plan	1	Lump sum	150,000	150,000	Objectives, existing studies, coordination with numerous affected parties
Develop Monitoring Program	1	Lump sum	25,000	25,000	Monitoring protocol, coordination
Establish Groundwater Database	1	Lump sum	75,000	75,000	Baseline and historical data, GIS
Public Outreach and Coordination	1	Lump sum	25,000	25,000	Stakeholder meetings, presentations, web site information, news releases
Subtotal ->				275,000	
Contingencies and Allowances (30%) ->				85,000	
Total Project Cost ->				360,000	

Initial Funding Requirements and Sources

Sutter County requires the full \$360,000 to complete the proposed groundwater planning project. The county submitted an application for an AB 303 grant earlier in 2001, but was not awarded any funding.

4. Environmental Issues

This project is primarily an exercise in data collection and analysis. No physical impacts are anticipated to occur as a result of this phase of the project, although the results of the project may lead to the development of future projects.

A draft California Environmental Quality Act (CEQA) checklist was not prepared for this proposed project because no physical alterations to the environment would occur as a result of this proposed action.

5. Implementation Challenges

Key Stakeholders

Table 20A-2 lists the key stakeholders that are expected to be involved in the groundwater management plan and monitoring program.

TABLE 20A-2
Stakeholder Roles and Issues
Sutter County Groundwater Management Plan

Stakeholder	Role/Concerns/Issues
Sutter County	<ul style="list-style-type: none"> Lead agency Coordination of all groundwater planning Develop future county groundwater ordinances
Water agencies, districts, companies: Butte Water District (WD), Sutter Extension WD, Sutter Bypass WD, Butte Slough Water Users' Association, Meridian Farms Water Company (WC), Butte Slough Irrigation District (ID), Pelger WD, Sutter Mutual Water Company (MWC), Pleasant Grove/Verona MWC, Natomas Central MWC, South Sutter WD, Tudor MWC, Garden Highway MWC, Feather WD, Newhall Land Farming Company, Sutter County Waterworks District #1, Rio Ramaza CSD, East Nicolaus MWC	<ul style="list-style-type: none"> Sustainable groundwater resources Export and overdraft concerns Potential land subsidence Drainwater quality Monitoring cooperators
Reclamation districts: 70, 1660, 1500, 777, 1001, 1000	<ul style="list-style-type: none"> Water quality issues Monitoring cooperators
Municipalities: Yuba City, Robbins, Live Oak	<ul style="list-style-type: none"> Ground water quality and quantity for municipal use Monitoring cooperator
Neighboring counties: Butte, Placer, Yuba, Colusa, Sacramento, Yolo	<ul style="list-style-type: none"> Regional groundwater concerns
Private citizens and citizen groups	<ul style="list-style-type: none"> Groundwater overdraft concerns Water quality concerns Potential land subsidence issues Monitoring cooperators
DWR Division of Local Planning and Assistance	<ul style="list-style-type: none"> Groundwater data Monitoring cooperator
U.S. Fish and Wildlife Service, California Department of Fish and Game	<ul style="list-style-type: none"> Potential environmental issues

Countywide Coordination

The main issue facing Sutter County and the stakeholders described in Table 20A-2 is the current lack of coordinated planning for groundwater. The main implementation challenge of developing this groundwater management plan would be coordinating the numerous

public and private entities including water districts, reclamation districts, water companies, and individuals that operate wells. Many of these water agencies have already developed and implemented groundwater management plans that will require further coordination for plan consistency. Successful implementation of the groundwater management plans depends on solid countywide objectives and input from all stakeholders.

Groundwater Monitoring Cooperation

The proposed monitoring program is an essential part of proper groundwater management and requires cooperation from most or all of the listed stakeholders. Well operators would be asked to provide historical data and allow future monitoring of wells. If stakeholders are directly involved with the groundwater management planning process, they would be more likely to be involved with the implementation of the plan and the necessary monitoring.

Public Perception Issues

There are serious concerns throughout most of the Sacramento Valley regarding the long-term drawdown of the groundwater aquifers, groundwater quality, and the potential for land subsidence. The public and all affected water entities should be educated about this planning process and get involved with the plan's objectives. Stakeholder input to the groundwater management plan should minimize any negative public perception issues.

6. Implementation Plan

This project is ready to proceed upon complete funding. Public outreach, researching existing groundwater data and studies, and developing the groundwater management plan objectives could begin immediately by Sutter County personnel. The selection of an engineering consultant would be required to perform the majority of tasks in developing the plan and monitoring program.

Assuming that the project would begin in January 2002, the estimated completion date is January 2004. A preliminary implementation schedule for major project tasks is shown on Figure 20A-2.

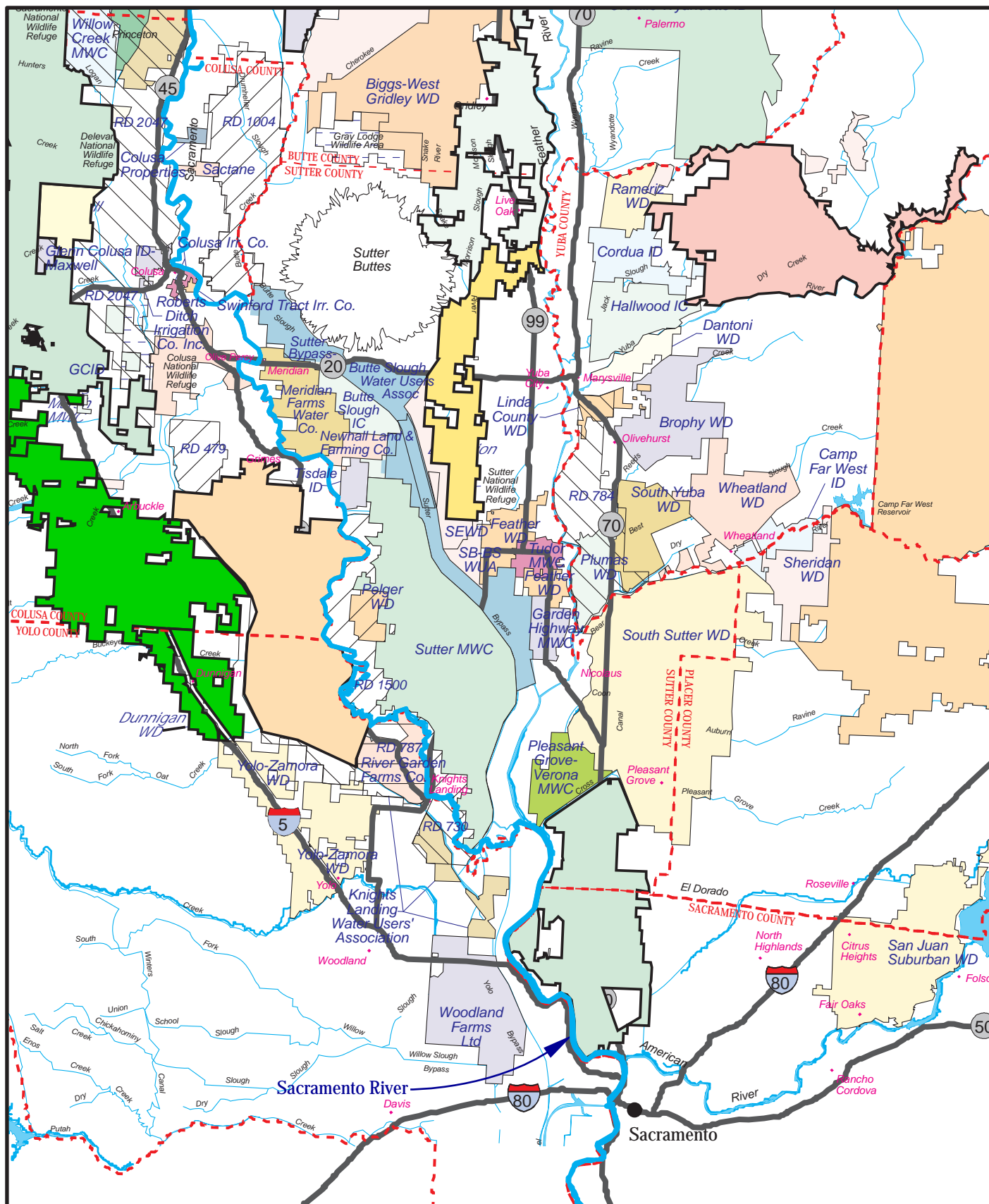


FIGURE 20A-1
PROJECT LOCATION MAP
 SUTTER CO. GROUNDWATER MANAGEMENT PLAN
 SHORT-TERM PROJECT EVALUATIONS
 SACRAMENTO VALLEY WATER MANAGEMENT AGREEMENT

CH2MHILL
 in association with
MONTGOMERY WATSON HARZA
MBK
SWRI

W072001014RDD_89 (11/5/01)

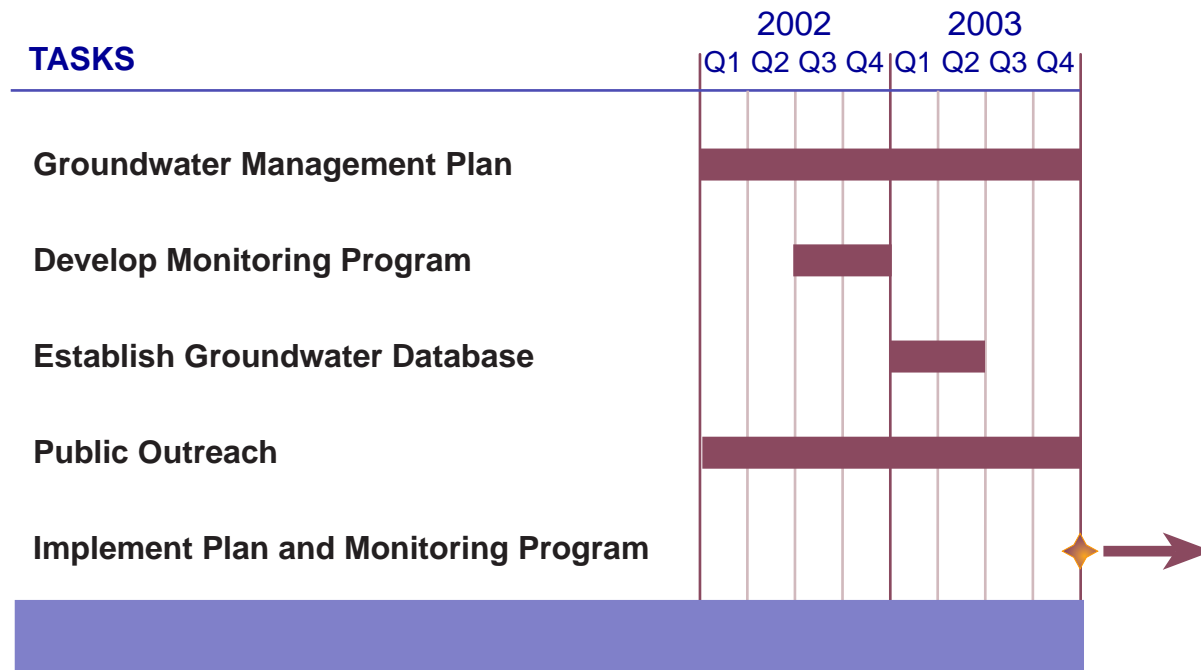


FIGURE 20A-2
PRELIMINARY IMPLEMENTATION SCHEDULE
 SUTTER CO. GROUNDWATER MANAGEMENT PLAN
 SHORT-TERM PROJECT EVALUATIONS
 SACRAMENTO VALLEY WATER MANAGEMENT AGREEMENT